

# Systems Analysis, Design & Testing Project

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## Summary

### Overall concept of the Arcade Ticketing System

The Arcade Ticketing System is designed to streamline the management of tickets and game sessions in an arcade environment. The system aims to replace the manual, outdated ticketing processes with a more suitable, digital solution that enhances user experience, operational efficiency, and data accuracy. By providing this platform for issuing, redeeming, and managing tickets, the system enables arcades to handle customer interactions and queries more effectively, reduces human error and collects valuable data for operational analysis.

### The High-Level System Operation

At a high level, the system operates through three main components: ticket issuance, ticket redemption, and system administration. When a player uses an arcade game machine, the system generates digital tickets instead of the classic physical ones, based on performance and game results after each round. These tickets are automatically linked to the players account or issued via a QR code or smart card. Players can redeem tickets for rewards at a kiosk or the counter, where then the system validates ticket authenticity and updates the players balance. Administrators have access to a secure backend dashboard for monitoring system activity, managing game-machine settings and security, inventory for prizes, and performing maintenance or any sort of updates. The entire system functions in real time, supporting both online and offline modes for resilience and scalability.

### Main features, functionalities and system purposes

- **Digital Ticket Management:** Automates ticket generation, tracking, and redemption to replace paper-based methods.

- **User Authentication:** Allows players to register and or log in to view their ticket balance, transaction history, and redeem rewards.
- **Prize Inventory Control:** Enables administrators to manage prize stock levels and associate ticket costs with each prize item.
- **Game Integration:** Connects directly with arcade game machines to collect data and issue tickets automatically based on winnings.
- **Reporting and Analytics:** Generates real-time reports on ticket usage, machine activity, peak usage times, and redemption trends.
- **System Administration Panel:** Provides tools for staff to use and manage user accounts and their history, adjust ticket allocation rules, and configure prize settings.
- **Scalability and Security:** Designed to support large numbers of users and machines while ensuring secure transactions and data integrity.

**System main purpose:** The primary purpose of the Arcade Ticketing System is to modernize the arcade experience and make it more efficient by introducing a digital, user-friendly ticket management system platform that benefits all customers and arcade operators.